

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A method of communicating among nodes in a wireless network, comprising:

assigning a timeslot to each of a plurality of nodes in the wireless network, the timeslot being a time for a corresponding one of the plurality of nodes to receive any messages transmitted by all other nodes of the plurality of nodes to the one node;

assigning a modulation scheme to each of the plurality of nodes;

using the assigned modulation scheme, transmitting the messages to one destination node within the plurality of nodes from all of the other of the plurality of nodes, the messages being transmitted during a timeslot assigned to the one destination node, the timeslot being other than a receiving timeslot for each of said all of the other of the plurality of nodes; and

receiving, at the one destination node, the messages from the all of the other of the plurality of nodes.

2. (Original) The method of claim 1, wherein the assigning comprises assigning one of a plurality of transmit spreading codes to each of the plurality of nodes.

3. (Original) The method of claim 1, wherein the assigning comprises assigning one of a plurality of hop sets to each of the plurality of nodes.

4. (Original) The method of claim 1, wherein:
the assigning comprises assigning a unique transmit spreading code to each of the plurality of nodes.

5. (Original) The method of claim 1, wherein:
the transmitting a message comprises transmitting messages from a plurality of transmitting nodes, and
the receiving a message comprises receiving, at one of the at least one destination node, the respective messages from the plurality of transmitting nodes.

6. (Original) The method of claim 1, wherein the receiving a message comprises receiving, at a plurality of the at least one destination node, messages from a plurality of transmitting nodes.

7. (Original) The method of claim 1, wherein the assigning comprises assigning one of a plurality of orthogonal or nearly orthogonal transmit spreading codes to each of the plurality of nodes.

8. (Original) The method of claim 7, wherein the assigning further comprises assigning one of K orthogonal or nearly orthogonal transmit spreading codes to each node, where K is a number less than a number of nodes in the wireless network.

9. (Original) The method of claim 7, further comprising:
waiting, after the transmitting, for an acknowledgement indicating correct receipt;
and

when the acknowledgement is not received after a predetermined period of time:
selecting a new transmit spreading code; and
retransmitting the message.

10. (Original) The method of claim 1, wherein:
the assigning comprises assigning a plurality of one of orthogonal or nearly orthogonal transmit spreading codes, carrier frequencies, and hop sets to each node of the plurality of nodes, each of the nodes having a plurality of transmitters and a plurality of receivers,

the transmitting comprises transmitting a plurality of messages from one of the nodes to the at least one other of the nodes, and

the receiving comprises receiving, from the one of the nodes, the plurality of messages.

11. (previously presented) A network comprising:

a plurality of nodes, each of the plurality of nodes having an assigned modulation scheme, each node of the plurality of nodes comprising:

at least one transmitter configured to transmit to a destination node using the assigned modulation scheme during a receiving timeslot assigned to the destination node; and

a plurality of receivers configured to receive any messages transmitted from all other nodes in the plurality of nodes to the node during a timeslot assigned to the node;

wherein said receiving timeslot assigned to the destination node is different from all other receiving timeslots, each assigned, respectively, to one of said all other nodes.

12. (original) The network of claim 11, wherein each of the nodes further comprises:

a plurality of transmitters, each of the transmitters being configured to transmit using one of a plurality of transmit spreading codes, a plurality of carrier frequencies, and a plurality of hop sets.

13. (original) The network of claim 11, wherein each one of the receivers is configured to demodulate each of the received messages using one of a transmit spreading code of the plurality of transmit spreading codes, a carrier frequency of the plurality of carrier frequencies, and a hop set of the plurality of hop sets.

14. (previously presented) A network comprising:

means for transmitting in the network that includes a plurality of nodes messages from more than one of the nodes using a plurality of modulation schemes, said messages transmitted by each of said more than one of the nodes in timeslots other than a receiving timeslot for said each of said more than one of the nodes, each said receiving timeslot being assigned, respectively, to a different one of said more than one of the nodes; and

means for receiving in said one of the nodes any of the messages from all of the other nodes in the plurality of nodes, said any of the messages being transmitted to said one of the nodes only during said receiving timeslot assigned to said one of the nodes.

15. (previously presented) A computer-readable storage medium having computer executable instructions encoded thereon, such that when at least one processor of the computer reads and executes the instructions, a node including the processor in a network having a plurality of nodes is configured to:

transmit in timeslots other than a receive timeslot for said node, each of said plurality of nodes being assigned, respectively, a different receive timeslot; and receive any messages from all other nodes in the network transmitted to the node during the receive timeslot assigned to the node.

16. (previously presented) A method comprising:
receiving, by a node in a network during a TDMA timeslot assigned to the node for receiving, any messages transmitted by all other nodes in the network to the node,

each of the other nodes transmitting messages to the node during the timeslot assigned to the node, each of the messages being transmitted using a different orthogonal or nearly orthogonal transmit spreading code;

wherein the timeslot assigned to the node is other than a receiving timeslot for said each of said all other nodes.

17. (previously presented) A method for simultaneously receiving a plurality of messages in a wireless network node, the method comprising:

receiving, by a node in a network during a TDMA timeslot assigned to the node for receiving, any messages transmitted by all other nodes in the network to the node, each of the other nodes transmitting messages during the timeslot assigned to the node, each of the messages being transmitted using a different carrier frequency;

wherein the timeslot assigned to the node is other than a receiving timeslot for said each of said all other nodes.

18. (previously presented) A method for communicating among a plurality of ultra-wideband radios functioning as wireless network nodes, the method comprising:

using one of a plurality of transmit spreading codes to transmit any messages to one of the ultra-wideband radios during a timeslot assigned to the one of the ultra-wideband radios, the timeslot being for receiving the messages from all of the other ultra-wideband radios of the plurality of ultra-wideband radios; and

receiving and demodulating the messages, using the one of the plurality of the transmit spreading codes at the one of the ultra-wideband radios during the timeslot;

wherein the timeslot assigned to the one of the ultra-wide band radios is other than a receiving timeslot for each of said all other ultra-wide band radios.

19. (previously presented) A node in a network of a plurality of nodes, said node comprising:

at least one transmitter configured to transmit to a destination node in said plurality of nodes using an assigned modulation scheme during a timeslot assigned to the destination node; and

a plurality of receivers configured to receive any messages from all other nodes in said plurality of nodes transmitted to the node during a timeslot assigned to the node;

wherein said timeslot assigned to the destination node, said timeslot assigned to the node, and each one of other receiving timeslots assigned, respectively, to a different one of said all other nodes, are all different timeslots.

20. (original) The method of claim 1, wherein the timeslot is the same for the each of the plurality of nodes.

21. (original) The method of claim 1, wherein the timeslot is different for the each of the plurality of nodes.

22. (original) The method of claim 1 wherein the timeslot is the same for certain of the plurality of nodes and is different for each of the plurality of nodes other than the certain nodes.

23. (previously presented) In an ad hoc, wireless network having a plurality of nodes, a method of communicating amongst said nodes comprising:

assigning a timeslot to each of said plurality of nodes, said timeslot being the time when said each of said plurality of nodes is capable of receiving messages from all other of said plurality of nodes and being a different timeslot from all receiving timeslots assigned, respectively, to said all other of said plurality of nodes;

assigning a modulation scheme to said each of said plurality of nodes;

transmitting said messages from at least one of said all other of said plurality of nodes in accordance with said modulation scheme to one of said each of said plurality of nodes during said timeslot assigned to said one of said each of said plurality of nodes; and

receiving said messages at said one of said each of said plurality of nodes.